

Central Asia Environmental Security Technical Workshop: Responding to the CENTCOM Vision

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August 1, 2002

U.S. Department of Energy

Lawrence
Livermore
National
Laboratory

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Central Asia Environmental Security Technical Workshop:

Responding to the CENTCOM Vision



UCRL ID-149838

**Lawrence Livermore National Laboratory
Livermore California**

**Tuesday and Wednesday
6 and 7 August 2002**

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Summary

Environmental security is not formally classified as a "vital mission" in the USCENTCOM ranking of priorities in its area of responsibility. Rather, it is ranked as an "other/important" mission in Central Asia, thereby supporting the war making efforts in the region by improving stability of the regimes in the region. Environmental security is, however, the USCENTCOM primary mechanism for engagement in the region. USCENTCOM sees environmental issues as among the most destabilizing issues in the region; anything that can be done to ameliorate them, works to enhance stability. By environmental issues, USCENTCOM includes:

- water access, quality, and control,
- transboundary resource competition,
- migration of pollutants,
- land use,
- public health/HIV/Famine, and
- industrial pollution.

Objectives of USCENTCOM work in Central Asia are:

- improving resource use,
- disaster response,
- international cooperation, and
- civil-military cooperation, particularly with the local military and between the local civilians and the U.S. military.

Activities to date include assistance, education, and military-to-military contacts, bilateral and multilateral conferences on the issues, and interagency coordination in the region. The Comprehensive Threat Reduction program has been the backbone of its Central Asian funding.

LLNL briefed its Science and Technology to Advance Regional Security (STARS) program in Central Asia. STARS is not an assistance program. Instead, STARS collaboratively addresses problems that lie at the intersection of U.S. interests, foreign interests, and expected resources. STARS projects must include a partner from at least one Central Asian state and must address a problem related to:

- disaster response,
- environmental quality,
- natural hazards,
- border security, and/or
- water resources.

LLNL experience with science and technology investments in the former Soviet Union suggests and enormous return on investment, in terms of both local effort and local currencies.

LLNL-CENTCOM Central Asia Environmental Security Technical Workshop

In response to a USCENTCOM request, the Central Asian Regional Environmental Officer (REO) developed two cables (Tashkent 1818 and Tashkent 2452) outlining regional environmental priorities:

- emergency response,
- use of transboundary water resources,
- monitoring and protection of flow and quality of transboundary water resources,
- evaluation/prevention of threat of hazardous material contamination,
- remediation of Caspian/Aral Seas, and
- development of environmental laws/regulations/infrastructure.

To catalyze activity in Central Asia, USCENTCOM has utilized the input from the REO and the STARS program, among others, to submit an environmental security item in their FY04-09 Program Objective Memorandum (POM). This program is called the Central Region Environmental Security program (CRESP). The initial request is for \$18M over five years but there are 15 distinct budget review steps and changes can be expected. A portion of any environmental security funds will be for high-impact, short duration projects. The ideal initial program is one project for each of the five countries and several regional projects that are born multilateral. The Kaji-Say, Kyrgyzstan mine tailings project is viewed as a typical CRESP project. A list of selected country and regional projects is given in the Action Items section below.

It was observed that, even for the small set of projects identified by workshop participants, the expected available funds from all USG sources would be inadequate. There was considerable discussion regarding potential alternative donors and a separate document synthesizing that discussion and the preliminary strategy is being developed for later distribution.

Agenda

Central Asia Environmental Security Technical Workshop: Responding to the CENTCOM Vision

Lawrence Livermore National Laboratory
(B132, Room 1781)

Tuesday 6 August

- 0730 *Badging at LLNL West Gate Badge Office*
- 0800 *Greetings, Opening Remarks, and Meeting Objectives (Jeff Richardson) — B132, R1781*
- 0805 *Overview and Review (Jeff Richardson)*
Origins, Role, and Status of Environmental Security in CENTCOM (Mike Bonadonna)
The Response of the Central Asia Regional Environmental Officer to Gen. DeLong's Request (Bob Watts)
Origins, Role, and Status of Environmental Security in LLNL (Jeff Richardson)
- 0830 *Technical Development (LtCol. Mike Bonadonna)*
The LLNL STARS Effort (Nina Rosenberg)
Priorities from the Region (Bob Watts)
Central Region Environmental Security Program — CRESP (Mike Bonadonna)
Identify Current Gaps and Develop Strategies to Close Them (All)
- 1030 *Demonstration of the LLNL Counterproliferation Analysis and Planning System (CAPS) — B132, R1102*
- 1200 *LUNCH (B132, R1781)*
- 1300 *Financing (Richard Knapp)*
The Weldon Process (Debbie Ball)
The 2004 CENTCOM POM (Mike Bonadonna)
DOE Funding of Environmental Security Projects in Central Asia (DOE)
Discussion (All)
- 1430 *Demonstration of the Global Environmental Threat Consequence Analysis Tool — GETCAT (Nina Rosenberg)*
- 1515 *BREAK*
- 1530 *Strategies for the Donors' Conference (Bob Watts)*
Review of Objectives for Donors' Conference (Mike Bonadonna)
Lessons from Previous Donors' Conferences (Fiona Hill)
Status of Donor's Conference and Its Structuring (All)
- 1700 *Adjourn*
- *BBQ Dinner at the Ball Estate (Host's: Debbie and Charles Ball)*

Wednesday 7 August

0730 *Meeting Room Available*

0800 *Review of Day 1 and Outstanding Action Items (LtCol. Mike Bonadonna)*

0830 *Develop Scope, Schedule, and Budget on Identified Projects (Andy Thompson)*

1030 *Demonstration of Groundwater Processes: Scaled-Physical and Computer Models — B132, R1781 (Andy Thompson)*

1115 *The LLNL Noble Gas and Stable Isotope Laboratories — B151, R1131A&B (Dave Smith)*

• **LUNCH**

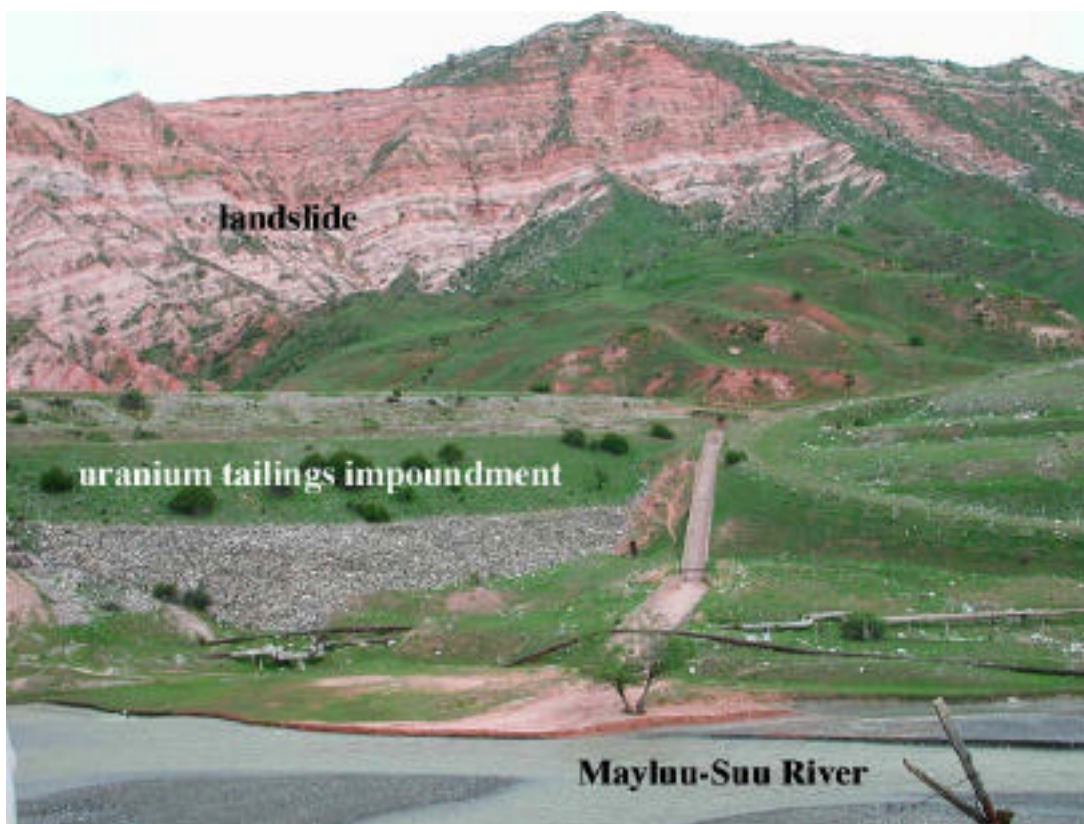
1300 *LLNL Facility Tour*

1400 *Tour of the LLNL National Atmospheric Release Advisory Center (NARAC) — B172*

1530 *Path Forward (Jeff Richardson)*

1630 *Depart for SF Giants-Chicago Cubs Baseball Game*

CONTACT: Richard Knapp (925-423-3328)



There are 23 uranium tailings impoundments and more than 200 landslides at Mayluu-Suu, Kyrgyzstan. Many of these impoundments are precariously poised on the banks of the Mayluu-Suu River, a tributary to the Syr-Darya, which courses through the Fergana Valley in Uzbekistan. This hand-held photograph shows a major landslide behind one uranium tailings impoundment and illustrates the potential for landslides to bulldoze radioactive tailings into the Mayluu-Suu River.

List of Participants

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Action Items

1. Distribute proceedings by 16 August
2. Develop proposals for high impact projects by 29 August to LLNL (knapp4@llnl.gov) and LLNL to package to CENTCOM by 7 September

General Project Selection Criteria

- In the U.S. interest
- In the interest of the host country or region
- Within financial and human resources limits

Country-Specific Project Selection Criteria

- Environmental or disaster preparedness context
- High impact
- Tangible results
- Two-year timeframe or less

Regional Project Selection Criteria

- Include all of country-specific criteria
- Born multilateral

Selected Projects

- Kazakhstan: Ulba Metallurgical Plant (LLNL)
- Kyrgyzstan: Mayлуу-Suu uranium tailings impoundments (LLNL)
- Tajikistan: Seismic Monitoring Network (LLNL)
- Turkmenistan: Tabled for 21 August teleconference
- Uzbekistan: Surface water monitoring (SNL)
- Regional: GETCAT (LLNL)
- Seismic (LLNL)

3. LLNL to summarize discussion and synthesize a plan for a funding conference by 14 August
4. Participants to actively ensure funded projects included in EUR/ACE Central Asia environmental projects list
5. Mike Congdon to acquire list of all funded projects on health, environment, and energy in Central Asia by 20 August
6. Mike Bonadonna to arrange for teleconference on 21 August
7. Participants to communicate results of workshop
 - a. Mike Bonadonna with OSD
 - b. Jake Mentz with Alan Hecht (NSC)
 - c. Fiona Hill with Matt Bryza (NSC)

USCENTCOM Environmental Security Program



USCENTCOM ENVIRONMENTAL SECURITY PROGRAM

6 Aug 02

Lt Col Bonadonna, CCJ5-E

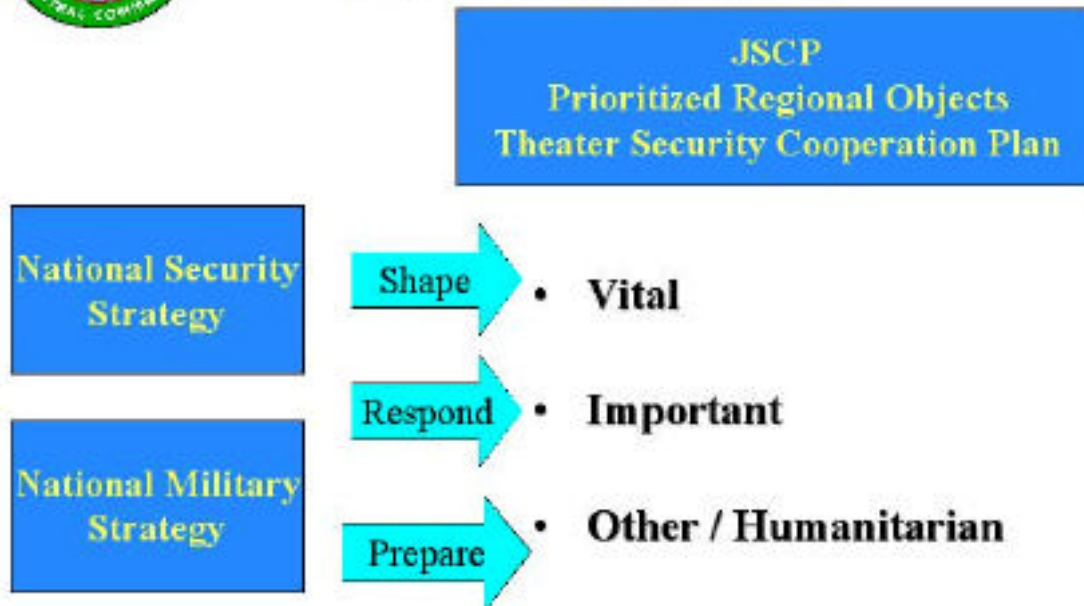


Purpose

**To describe the origin and development of
the USCENTCOM Environmental
Security Program**



Why is Environment a CENTCOM Mission?



Destabilizing Environmental Issues in CENTCOM's Region

- **Water Access, Quality, and Control**
- **Trans-boundary Resource Competition**
- **Migration, Refugees, and Land Use**
- **Public Health/HIV/Famine**
- **Industrial Pollution**
- **Environmental Degradation/Desertification**
- **Eco-Terrorism/War**



Environmental Security Vision

USCENTCOM will address environmental issues that affect our collective national security in order to shape a positive regional security environment, prevent conflict and promote sustainable developments and stability. We will cooperate with other U.S. agencies, the DOS Environmental Hubs, NGOs, PVOs and international organizations to engage the militaries of the region, in support of civil authorities.



Environmental Security Program History

- **Began in the mid 1990's**
- **Development of ES Annex to the TEP**
- **2000 Gulf States Environmental Security Conference**
- **CCJ5 takes the lead with CCJ2 and CCJ4 support**
- **Established Partnership with Lawrence Livermore National Lab**
- **2001 CAS ESC: Mar 01 in Garmisch, GE**
- **2002 CAS ESC: Apr 02 in Chiemsee, GE**



Engagement Objectives Enhance Stability & Avert Crisis

**Resource
Management**

**Disaster
Response**

**International
Cooperation**

- **Understand environmental issues impacting security**
- **Engage Regional Militaries**
- **Involve Civilian Leadership**
- **Encourage Planning and Execution**
- **Improve Civil-Military Cooperation**



CENTCOM Activities

- **Direct Role**
 - **Warning and Analysis**
 - **Assistance Programs**
 - **Education and Training**
 - **Military-to-Military Contacts**
- **Indirect Role**
 - **Interagency Coordination and Support**
 - **Bi-lateral and Multi-lateral Conferences**
 - **Contingency Planning**



Direct Role Examples

- **Analysis:**
 - **Technical Assessments Supporting Operations**
- **Assistance:**
 - **Water purification equipment**
 - **Excess Defense Articles**
 - **Engineering Projects**
- **Education and Training:**
 - **Environmental Protection workshops**
- **Military-to-Military:**
 - **Sharing waste treatment technologies to reduce water pollution**



Resources & Funding

- **Funding for CAS Engagement**
 - **Traditional CINC Activities (TCA)**
 - **Warsaw Initiative Funds (WIF)**
 - **Cooperative Threat Reduction (CTR)**
- **OSD Environmental Funding**
 - **Defense Environmental Security International Cooperation (DESIC) Program**
- **Central Region Environmental Security Program**
 - **Specific Initiative for Environmental Security Engagement and Improvement Projects**



Environmental Security Program Status

Where Are We Now?

- Developing USCENTCOM ES program for the Theater Security Cooperation Plan (CCJ5)
- Planning 2002 Gulf States ESC for Sep 02
- Coordinating LLNL projects
- Planning expanded ES-related Mil-Mil contacts
- Working with the USG Interagency for policy and program development



The Need for Interagency Cooperation

**Same Goals
Different Priorities - Different Resources**

**Regional
Stability**

**Humanitarian
Relief**

- **Assistance Programs**
- **Education and Training**
- **Conferences & Working Groups**
- **Negotiations**



Way Ahead

- **Development of USG Policy Central Asian**
 - Including Environmental Security
 - Ongoing since April 02
- **GCC ES Conference**
 - 17, 18 Sep 02 in Qatar
- **CAS ES Conference**
 - TBD
- **CAS Donor's Conference**
 - TBD at State Department Discretion



Environmental Security Program Summary

Environmental Security is a key mission area for USCENTCOM

Engagement through Environmental Security improves regional stability and facilitates our access to the region

USCENTCOM will continue to support Environmental Security Cooperation with Central Asia and the Gulf States

The LLNL STARS Program



The STARS Effort

Nina Rosenberg
LLNL

6 Aug 02

Central Asia Environmental Security Technical
Workshop: Responding to the CENTCOM Vision

History of STARS



- LLNL has been active in environmental security for many years
- Middle East work began in 1997
- Border security work in Uzbekistan began in 1998
- Fact-finding trips, workshops in Kazakhstan, Kyrgyzstan 2000-2001
- STARS (Science and Technology to Advance Regional Security)
acronym coined by LLNL Jan 02 for Weldon workshop on Central Asia



A Congressional Workshop
on the Advancement of
U.S. National Security Through
Science and Technology Cooperation
in Central Asia
14 February 2002

What is STARS?



- STARS is a program based on projects that are:
 - collaborative
 - bilateral/multilateral
 - science and technology based
- STARS projects must
 - provide an opportunity for engagement in the region of interest
 - address real problems that could otherwise lead to destabilizing tensions in a region
- Other STARS objectives include:
 - helping to reduce illicit smuggling of weapons and drugs
 - promoting education and welfare of local population

LLNL and STARS



LLNL is engaged in STARS projects in several regions of the world important to U.S. national security

STARS/Central Asia and USCENTCOM



Environmental Security is USCENTCOM's primary option for assuring and engaging the Central Asian states and promoting multilateral cooperation.

STARS/Central Asia directly supports (and can be a great vehicle for implementing and amplifying) USCENTCOM's activities and objectives in environmental security.

LLNL first-hand knowledge about the the environmental concerns in the region, science and technology based measures to address these problems, and partners for collaboration, as well as its long history of involvement with national security matters, makes it a perfect partner for USCENTOM.

Topics for STARS/Central Asia projects



One STARS project proposal concerns a former nuclear test site in Kazakhstan



Photo of device emplacement shaft associated with underground nuclear in Balapan area at Semipalatinsk

- The Soviet Union conducted over 400 nuclear tests at the Semipalatinsk Test Site in northern Kazakhstan
- Scientists from LLNL and Kazakhstan have developed a plan to assess the threats of contamination of groundwater and surface water from the underground tests
- Many aspects of this project are readily transferable to other contaminated sites in Central Asia

Another focuses on waste disposal practices at an industrial facility in Kazakhstan



Typical discharge of liquid wastes into storage pond at Ulba

- The Ulba Metallurgical Plant is one of the oldest plants supporting the nuclear cycle in the former Soviet Union
- The plant is a representative example of industrial pollution in Central Asia. Leaking waste ponds at the site containing toxic and radioactive material threaten both the Irtysh River and nearby water supply wells
- LLNL and plant personnel have developed a plan to work together to characterize, manage and solve some of the site's problems

Several project proposals address the problem of uranium mine tailings in Kyrgyzstan



A major landslide behind a uranium tailings impoundment at Mayлуу-Suu

- Uranium mine tailings pose a real threat to the water resources in the Fergana Valley and elsewhere in Central Asia
- In 2001, LLNL surveyed several sites in Kyrgyzstan with local representatives from the mining industry
- Together with our Central Asian partners, we have developed a collaborative project to demonstrate mitigation strategies at such sites

Funds from State (Ambassador Taylor's office) recently authorized for Kaji-Say project

STARS projects address border security in Uzbekistan



Equip border points of entry with capability to detect weapons of mass destruction and drugs



Upgrade laboratory and mobile characterization capabilities

Expand on existing programs to develop common science and technology tools and practices to promote regional border security



Promote regional information exchange, standards, and exercises

Support from State and DOD

Regional STARS/Central Asia project proposals

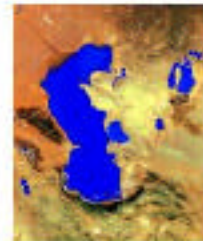


Disaster response - Develop and exercise emergency response plans for individual states and region using GETCAT.



Water resources - Start with individual states and work toward regional network of water resources experts, with U.S. acting as honest broker and facilitator.

Caspian and Aral Seas - Identify, locate, and classify point-sources of radionuclide and other hazardous contamination in the Caspian. Protect aquifers in Aral Sea from contamination.



STARS/Central Asia project proposals by State


- **Kazakhstan**
 - Assess radionuclide migration at Semipalatinsk
 - Remediate groundwater at Ulba Metallurgical Plant
 - Manage water resources in the Lake Balkhash-Ili River Basin
- **Kyrgyzstan**
 - Eliminate threat of Kaji-Say U contamination to Lake Issyk-Kol
 - Eliminate threat of Maytau-Suu U tailings to Fergana Valley
 - Assess risk of Ak-Tuz site and rehabilitate U tailings impoundments
 - Prevent failure of and human exposure to threat of Ming-Kush tailings
 - Decommission Kara-Balta U tailings to prevent contamination of cereal crops
 - Creation of base for application of modern irrigation technologies in Issyk-Kol region
- **Tajikistan**
 - Restore seismic monitoring capability
- **Uzbekistan**
 - Expand on existing programs to develop common science and technology tools and practices to promote regional border security
- **Turkmenistan**
 - ??

The future of STARS/Central Asia



The environmental component of regional security is emerging as a key element of USG policy in Central Asia.


The Central Region Environmental Security Program



U. S. CENTRAL COMMAND

**CENTRAL REGION
ENVIRONMENTAL SECURITY
PROGRAM (CRESP)**

Lt Col Mike Bonadonna, USCENTCOM J5



**USCENTCOM
CENTRAL REGION
ENVIRONMENTAL SECURITY
PROGRAM**

- Background
- Program Description
- The Way Ahead



BACKGROUND

- **USCENTCOM wishes to take a more proactive role in Environmental Security**
 - Result of the 2002 Central Asian Environmental Security Conference
- **CRESP will address longstanding regional environmental problems**
- **CRESP is intended to serve as a catalyst for environmental mitigation and consequence management projects of other agencies**



PROGRAM DESCRIPTION

- Program runs from FY04 to FY09 (if funded)
- Covers activities throughout the CENTCOM AOR
- Total program value is roughly \$18M
- Program funds
 - 2 Contractor positions at HQ USCENTCOM and Regional Environmental Hubs
 - 2 Environmental Security Conferences per year
 - \$1M-\$2M per year for environmental engineering projects
 - Up to 20 exchanges of environmental experts per year



THE WAY AHEAD

- USCENTCOM will work with Joint Staff to secure funding for CRESP through normal channels
- CCIJ5-E dedicating one officer to manage Environmental Security and prepare for CRESP execution
- Program development to occur in FY03
 - Identifying contractor support
 - Planning exchange program
 - Determining Environmental Engineering projects